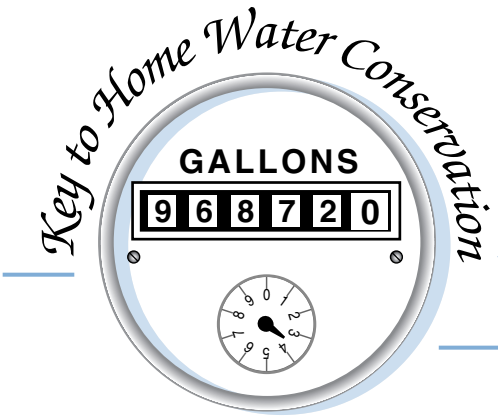


Reading your own water meter will allow you to check your water bill, detect leaks, and learn which of your appliances and fixtures use excessive water. With this information, you can best know where to save.

Your Water Meter

HOW TO READ YOUR METER

The meter is located in the ground, usually at the front of the property, inside a rectangular box with a metal, plastic or concrete lid. Lift up the heavy lid. A lift-up cap may cover the dial. Clean the dial with window cleaner, if it is difficult to read. Most meters in our area are of the type illustrated here. If you have the older type with multiple dials, call your utility to request a replacement.

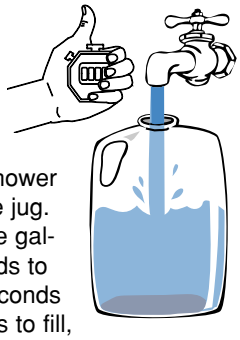
First look for a small red triangle at the center of the meter. If this triangle is moving (or if there is no triangle but the sweep hand is moving), water is being used in the house. Turn off all water-using appliances (faucets, ice maker, dishwasher, washing machine, etc.). If the red triangle at the center of the dial is still moving, you have a leak. Assuming for the moment no leak and that you just want to learn how much each appliance or fixture uses, read the meter as follows:

Your water meter reads like a car's odometer, but with a permanent zero in the gallon place. Single gallons are counted by the red sweep hand. A complete revolution of this hand is 10 gallons and causes the register to move.

In the illustration, the red sweep hand is on 3.5, so plug this figure into the gallons place to read 968723.5 gallons.

DETERMINING HOW MUCH WATER EACH APPLIANCE OR FIXTURE USES

Make sure all water use is temporarily stopped. Read the meter (as above 968723.5). Then flush the toilet and take another reading. If it reads 968727.0, your toilet uses 3.5 gallons per flush. You can check every fixture and appliance, such as your dishwasher or clothes washing machine, for amount of water used per "water-using event." Any kids in the house may enjoy being part of this research or doing the whole thing as a science project.



For faucets and showerheads, calculate flow rate as follows: Take a plastic gallon milk or water jug and cut the top off, so it fits over your shower head. Place this container over the the showerhead, turn the shower on as normal, and record the time to fill the jug. Divide the seconds it took into 60 to get the gallons per minute (gpm). If it takes 10 seconds to fill the jug, your flow rate is 6 gpm; if 15 seconds to fill, your flow rate is 4 gpm; if 20 seconds to fill, 3 gpm; if 24 seconds to fill, 2.5 gpm; if 30 seconds to fill, 2 gpm. Low-flow shower heads use only 2.5 gpm.

Using this technique, measure the flow rate of your sink faucets, garden hose or other devices.

LEAKS WASTE WATER

Does the red triangle on your meter turn when all water-using appliances are off? If so, you have a leak. The most obvious leaks are dripping faucets and running toilets. Malfunctioning water softeners, automatically filling swimming pools, hot water heaters and faulty irrigation valves are other areas where you might have a leak. If no obvious locations have leaks, and the red triangle is still moving, you may have an underground leak, foundation leak, or leak behind a wall and should call a plumber.

FAUCETS

Check faucets, including seldom-used faucets in storage rooms, and shower heads periodically for leaks. Faucet and shower head leaks are usually caused by worn washers or "Y" rings (for washerless faucets). Just turn off the water supply line to the faucet, replace the washer and turn on the line again. Most people can repair faucet leaks, with a do-it-yourself book as support, or you can hire a plumber.

Check outside faucets for leaking water, particularly during the spring watering season. In particular, a hose with an automatic shutoff nozzle can be mistakenly left on. A hose mistakenly left dribbling away in the grass or garden can waste thousands of gallons of water.

TOILETS

Many toilet leaks are obvious because the toilet "runs," makes noise or you can see movement in the toilet bowl between flushes. Silent toilet leaks also occur. To test for a silent leak, drop a little food coloring into the tank, and without flushing, wait about 10 minutes. Food coloring willmove from the tank into the bowl if you have a leak.

The rubber flush valve or "flapper" decomposes over time. If black residue comes off when you touch the flapper or it looks warped or disfigured, it is time to replace it. Easy-to-install replacement kits are available at most home supply stores. To pick the right type of flapper, be sure you know how many gallons your old toilet uses or bring the old flapper with you.

Correct your home water use survey

After you have used your meter and the flow-rate measurement method to survey the water use of all your fixtures and appliances, make corrections to the Home Water Use Survey and add up your total household water use again. The saying "you can't know where you're going unless you know where you've been" applies to conserving water in your home.

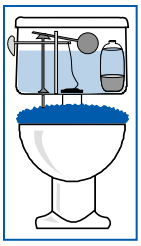
UNDERSTANDING YOUR WATER BILL

If you study your water bill, you will see that you are charged for sewage treatment on all water used, since all water that runs down your drains has to go to the sewage (wastewater) treatment plant. Notice on your bill that sewage treatment is expensive, often 1 1/2 times the cost of your water. By using less water, your combined sewer and water bill will drop.

REDUCING IRRIGATION USE

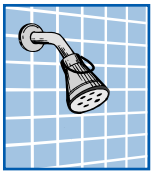
If your water bill is high and you suspect irrigation is your biggest use, there are various programs available to help you cut back. A visit by a trained irrigation auditor will assist you with timer settings and may be able to solve some of the most basic problems with your system. A system retrofit may be necessary to solve other problems. Contact the WAV Water Conservation Program at (386) 322-5160 #33 or visit www.wavh2o.com for listing of irrigation auditors and information on programs available.

WATER-SAVING DEVICES



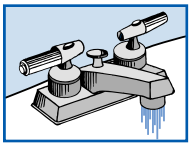
Toilet Displacement Devices

It used to be suggested to put a brick in your toilet tank to save water, but bricks decompose and sediment can clog the plumbing. Instead use a plastic bottle, about a quart in size. Place sand or rocks in the bottom of the bottle to weigh it down, fill with water and place this “displacement device” inside the tank. An amount of water equal to the volume of the bottle will be saved with each flush. If any problems develop, remove the device. (Don’t try this with a 1.6 gallon per flush toilet).



Low-flow showerheads

Since September 1983 no new building is to be constructed with showerheads or faucets with flows over 3 gallons per minute (gpm), as required by the Florida Water Conservation Act. New low-flow shower heads use only 2.5 gpm and cost from $3 to $25. Most people can install a low-flow shower head themselves, following the instructions that come with the device.



Faucet aerators

Devices that incorporate air into the stream of water, called faucet aerators, save water. First check the flow rate of your old faucets. For the kitchen faucet, for a strong flow to wash dishes and fill cooking containers, choose a faucet aerator with a 2.5 gallons per minute flow rate. Some types have on/off flip handles that allow you to increase or reduce the flow as needed. For your bathroom faucets, a flow of 1.5 gallons per minute is adequate. Screw out the old aerator using a wrench and take it with you to the hardware store to be sure the new aerator you buy will fit your faucet.

Dishwashers

Most automatic dishwashers use 10-15 gallons per wash. Newer models use 7-10 gallons. Check how much your dishwasher uses by reading your water meter. With any dishwasher, wait until you have a full load and use the shortest cycle possible.

Hot water heaters

A lot of water is wasted while you wait for water to heat up. Make sure your water heater is well insulated.Demand Water Heaters, also called Tankless or Instantaneous Water Heaters, save water by saving on time to heat water.

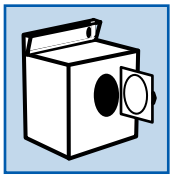
Assessing current water use and then reading about water saving devices and techniques will allow you to make a plan to save water (and money) in your household.

Low-flush toilets

The toilet uses more water than any other indoor fixture (when averaged over a month’s time). Older toilets use as much as 5-7 gallons per flush, but 3.5-gallon toilets have been available since the late 1970s. After September 1983 no building was constructed with a toilet tank larger than 3.5 gallons, under the Florida Water Conservation Act. Modern low-flow toilets use only 1.6 gallons per flush. Low-flow toilets have been required on all new construction or remodeling since 1995, by Federal law. To check how much your toilet uses, close the water fill valve on the toilet tank, flush to empty the tank and then hand fill the tank, noting how much water it takes to fill the tank to the water mark. You can also check how much your toilet uses by reading your water meter.

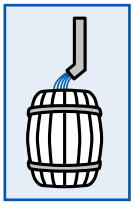
Pool covers

Water evaporates from swimming pools. Buy a pool cover and put it on whenever the pool is not in daily use.



Washing machines

Washing machines use an average of 50 gallons per wash. Front-loading or horizontal-axis (H-axis) machines use 30-60% less water. They also leave clothes drier, so drying cycles are shorter. With any washing machine type, you can save water by adjusting the water level to fit the size of the load. Wash only when you have a full load.



Rain barrels (cisterns)

For irrigation and car washing, rainwater can be collected in rain barrels or cisterns. Rooftops or driveways are prime catchment areas for rainwater. Plastic or metal garbage cans may also be used as rain barrels, located close to where you plan to use the water. A removeable screen at the top will keep out leaves and debris. Large underground containers, similar to a septic tank, can be used as a cistern. Even an inground swimming pool, can be used as a cistern, if kept screened.

For irrigation water-saving devices, like rain sensors, or water-saving irrigation techniques or landscape selections, see other pamphlets available from your public utility.

Prepared by the Water Authority of Volusia in partnership with the St. Johns River Water Management District.
Sources: American Water Works Association, City of Tampa, Southwest Florida Water Management District

HOME WATER USE SURVEY

Providing & Preserving Water
www.wavh2o.com

1. Shower

Total number of showers taken by your household per day times the average number of minutes spent in the shower times 3 gallons per minute (an average flow rate). (If you have calculated your actual flow rate or if you have flow restrictors with known 1.4 gallons per minute (gpm) flow rates, substitute those rates here.)

GALLONS USED IN SHOWER PER DAY:
____ showers X ___minutes per shower X 3 gpm= ___gallons.

2. Bath

Total number of baths taken by all members of your household per week times 30 gallons per bath equals gallons used weekly for baths. Divide by 7 for daily bath use.

GALLONS USED IN BATHS PER DAY:
____baths X 30 gallons ÷ 7 = ____gallons.

3. Toilets

Total number of people times 4 flushes (an estimated average) times 3.5 gallons per flush (a typical post-1980 toilet) or 1.6 gallons per flush with a modern low-flush toilet equals the total water used in flushing.

GALLONS USED IN FLUSHING PER DAY:
____ persons X 4 flushes X 3.5 gallons = _____ gallons.

4. Faucets

Total number of persons in household times # times each person uses faucet per day times average time in minutes each person uses faucet times 3 gallons per minute (a typical flow rate). Count shaving, tooth brushing, hand washing, etc.

GALLONS USED BY FAUCETS PER DAY:
____ persons X _____number times faucets used X ___ minutes faucet used X 3 gpm = _____ gallons.

5. Laundry

Number of loads per week X 50 gallons (a typical usage per load) equals gallons used in laundry per week. Divide by 7 to get daily usage.

GALLONS USED IN LAUNDRY PER DAY:
(____ loads per week X 50 gallons) ÷ 7 days = _____gallons.

6. Dishwasher

Number of times dishwasher is used per week X 15 gallons (a typical usage per load) equals gallons used in dishwasher per week. Divide by 7 to get daily usage.

GALLONS USED IN DISHWASHER PER DAY:
_____ times per week X 15 gallons) ÷ 7 days = _____ gallons.

7. Hand dish washing

Number of times hand dish washing is done per week multiplied by minutes water is running times 3 gallons per minute equals gallons used in hand washing per week. Divide by 7 to get daily usage.

GALLONS USED IN HAND DISH WASHING:
(____ times per week X __ minutes used X 3 gpm) ÷ 7 days = ___gallons.

8. Garbage disposal

Number of times garbage disposal is used per week multiplied by minutes water is running times 3 gallons per minute equals gallons used in garbage disposal. Divide by 7 to get daily usage.

GALLONS USED IN GARBAGE DISPOSAL:
(___times per week X __ minutes X 3 gpm) ÷ 7 days = ___gallons.

ADD TOTALS ABOVE TO FIND YOUR TOTAL DAILY HOUSEHOLD INDOOR WATER USE = _____ GALLONS.

1. Yard irrigation

Number of times lawn and other plants are watered each week times minutes per watering times 3 gallons per minute equals irrigation use per week. Divide by 7 to calculate daily usage. (If you have an irrigation well, gallons used will not be on your water bill. If you use reclaimed water for irrigation, this total will appear separately on your bill.)

GALLONS USED TO WATER PLANTS DAILY:
(____ times X ___minutes per watering X 3 gpm) ÷ 7 = ___gallons.

2. Other outdoor water uses

List your outdoor water use activities with the minutes the faucet runs for each activity. Some examples are car washing, pool refilling, cleaning outdoor furniture and equipment, etc.

Add these minutes together and multiply times 3 gallons per minute. Divide by 7 to calculate daily usage.

ADD TOTALS IN 1 AND 2 TO FIND YOUR TOTAL DAILY HOUSEHOLD

GALLONS USED OUTSIDE (ASIDE FROM IRRIGATION) DAILY:
(____minutes water used per week X 3 gpm) ÷ 7 = ___gallons.

OUTDOOR WATER USE =_____ GALLONS.

Add total indoor water use and outdoor water use to get total household water use =_____ GALLONS.

(Then divide by the number of people in your household to find daily per capita water use. Typical per capita use is 100-200 gallons. If your total is far from this, recheck your calculations).

Using total household water use (not the per capita use), calculate the following:

$$\%\ \text{indoor water use} = \frac{\text{total indoor water use}}{\text{total household water use}} = \_\_\_\_\_\%$$

$$\%\ \text{outdoor water use} = \frac{\text{total outdoor water use}}{\text{total household water use}} = \_\_\_\_\_\%$$

If most use is indoors, what fixture uses the most? Think about replacing that fixture with a new water-conserving fixture, and/or convince household members to change water use habits.

Flyers on using water efficiently are available from WAV at http://www.wavh2o.com, the St. Johns River Water Management District at http://www.sjrwmd.com, and University of Florida Extension at http://edis.ifas.ufl.edu. Consider changing your landscape to use more water-wise (xeriscape) plants.